Some further Remarks on the Use of the Eye-piece Prism in Measuring the Position-Angles of Double Stars. By the Rev. W. R. Dawes.

In my paper on the influence of the angle of position of double stars on the results of micrometrical measures (see *Monthly Notices*, June 1866), I adverted to an objection to the use of the prism suggested by Mr. Otto Struve, grounded on the possibility of errors of a different kind being introduced by it, and that in every case it might injure the quality of the telescopic images; and I understood him to say that this was the reason why astronomers in general had not adopted the use of the prism.

In a letter I have lately received from him, he says that his "*principal* objection to the exclusive use of the prism for observing double stars always in an apparently vertical line, consisted in the impossibility of ascertaining or avoiding by that means the so-called constant correction and its dependence on the distance."

With respect to this objection, I need only say, that my great object in the use of the prism was not either to ascertain or avoid such correction, but to obtain a *uniformity* in the measurements which I believe to be unattainable when they are made in all positions without any such precaution against the effect of obliquity. I also found in my own case that the error in the observed angle was far less when the stars were placed in an apparently vertical line than in any other position; and the small remaining error was not only *discovered*, but also entirely and easily *corrected*, by the simple process of measuring artificial stars made in pieces of cardboard, which admitted of the measurement of the very same objects in different positions by placing the pieces of cardboard on their different sides accurately cut. By this method also the *amount* of the error was presently found; and both that amount and the question of its dependence on the distance between the stars may be easily settled, by those observers who might not consider it worth while to pursue the observations on the artificial objects to the extent necessary for *destroying* the liability to error. This however I considered to be a result of sufficient importance to induce me to continue such observations until I found there was no remaining tendency to place the wires on one side of a vertical line rather than on the other; and for some years I occasionally had recourse to the same expedient, to maintain as far as possible a freedom from constant error in the measurements obtained in a vertical position.

Hopefield Observatory, Haddenham, Bucks,
1866, *Dec.* 13.

P.S.—It may be proper to add, that the use of the prism was not recommended by me in *all* cases; but only in those where the obliquity was such that a slight and not inconvenient inclination of the head was insufficient to bring the stars into an apparently vertical position.

Measures of the Binary Star ζ Herculis.

By the Rev. W. R. Dawes.

The small companion of *ζ Herculis* having emerged from its recent conjunction (which appears to have occurred in 1862 or 1863), I have succeeded in obtaining some micrometrical measures of it; of which I beg the Society's acceptance, as they may possess some interest with those who may have procured observations of the same object. I first heard that the small star had again appeared, by a letter from Mr. Alvan Clark, who saw it perfectly separated from the large one with a fine 7-inch object-glass of his own manufacture in the autumn of 1865. But his letter found me laid by with severe illness; the effects of which, combined with the extremely unfavourable season, prevented my attempting measures of the star till last September. I was then surprised at the ease with which it was seen; and the only difficulty in obtaining good measures arose from the unsteadiness of the images.

The following were obtained at three different epochs:—

1866. Sept. 5	P = 235°·32	Obs. 2	Wt. 7	D = 1″·± est.	Obs. 1	Wt. 3
14	235·97	7	32	1·± est.	1	2
17	234·27	5	33	0·800	4	13

Mean Result.

1866·70 P = 235°·14 Obs. 14 Wt. 72 D = 0″·856 Obs. 6 Wt. 18

1866. Oct. 16	P = 232°·94	Obs. 5	Wt. 33	D = 0″·827	Obs. 4	Wt. 13
31	226·86	7	52	0·830	4	28

Mean Result.

1866·81 P = 229°·22 Obs. 12 Wt. 85 D = 0″·829 Obs. 8 Wt. 41

1866. Dec. 30	P = 225°·26	Obs. 7	Wt. 51	D = 0″·974	Obs. 6	Wt. 39
31	224·30	3	12	1·017	4	12

Mean Result.

1866·99 P = 225°·08 Obs. 10 Wt. 63 D = 0″·984 Obs. 8 Wt. 51

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1867MNRAS..27...90.